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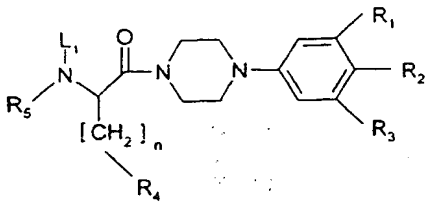
(54) Title: PIPERIZINE-4-PHENYL DERIVATIVES AS INHIBITORS OF THE INTERACTION BETWEEN MDM2 AND 53



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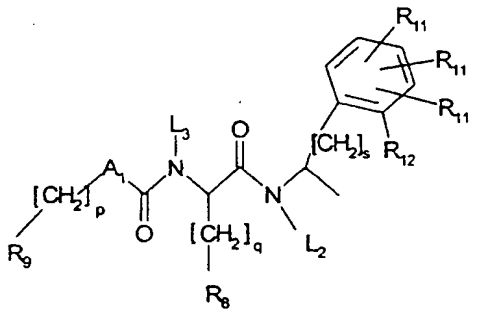

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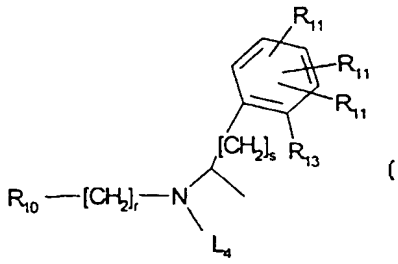

(3)

(57) Abstract

A compound of formula (1), wherein: R_5 is hydrogen, C_{1-4}alkyl, R_6CH_2– or $R_6C(O)$–; R_6 is aryl, heteroaryl, heterocyclyl, aminoC_{3-6}alkyl, N–(C_{1-4}alkyl)aminoC_{3-6}alkyl, NN–(diC_{1-4}alkyl)aminoC_{3-6}alkyl, or R_7; wherein the aryl, heteroaryl or heterocyclyl rings may be optionally substituted with up to three substituents independently selected from nitro, C_{1-4}alkyl, C_{1-4}alkoxy, halo, (C_{1-4}alkyl)sulfanyl, C_{1-4}alkoxycarbonyl, N–(C_{1-4}alkyl)carbamoyl, NN–(diC_{1-4}alkyl)carbamoyl, N–(C_{1-4}alkyl)amino or NN–(diC_{1-4}alkyl)amino; wherein R_7 is either a group or formula (2) or formula (3); and wherein L_1, L_2, L_3, L_4, R_1, R_2, R_3, R_4, R_8, R_9, R_{10}, R_{11}, R_{12}, R_{13}, A_1, n, p, q, r and s are as defined in claim 1. The compounds of formula (1) inhibit the interactions between MDM2 and p53 and may be useful in the treatment of cancers.